Translation

PCT/FR2003/003675

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference U19-19536 WO	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/FR2003/003675	International filing date (*day/month/year*) 11 décembre 2003 (11.12.2003)	Priority date (*day/month/year*) 12 décembre 2002 (12.12.2002)
International Patent Classification (IPC) or national classification and IPC C12Q 1/68, G01N 33/569, C12Q 1/70		
Applicant UNIVERSITE JOSEPH FOURIER		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand 24 juin 2004 (24.06.2004)	Date of completion of this report 09 November 2004 (09.11.2004)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/FR2003/003675

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed

☒ the description:

pages 1-22, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☒ the claims:

pages _____, as originally filed

pages _____, as amended (together with any statement under Article 19

pages _____, filed with the demand

pages 1-12, filed with the letter of 11 October 2004 (11.10.2004)

☒ the drawings:

pages 1/11-11/11, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

☒ the sequence listing part of the description:

pages 1-8, as originally filed

pages _____, filed with the demand

pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☒ contained in the international application in written form.

☒ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/FR2003/003675

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 8

because:

☐ the said international application, or the said claims Nos. _____ relate to the following subject matter which does not require an international preliminary examination *(specify):*

☐ the description, claims or drawings *(indicate particular elements below)* or said claims Nos. _____ are so unclear that no meaningful opinion could be formed *(specify)*:

☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. 8 .

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

INTERNATIONAL P[redacted]MINARY EXAMINATION REPORT

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Supplemental Box
(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: III.

1. Claim 8 was not searched and has not, therefore, been examined.

INTERNATIONAL P[redacted]IMINARY EXAMINATION REPORT

International application No.
[redacted]/FR 03/03675

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-7, 9-12	YES
	Claims		NO
Inventive step (IS)	Claims	1-7, 10-12	YES
	Claims	9	NO
Industrial applicability (IA)	Claims	1-7, 9-12	YES
	Claims		NO

2. Citations and explanations

1. Claim 9 does not involve an inventive step (PCT Article 33(3)) in the light of D3 (WO-A-01/44266), which describes inhibition of the binding of paromomycin to the RNA of HCV (region III) by aminoglycoside antibiotic neomycin (see page 31, line 5 to page 33, line 8). The aim of the method described in D3 is to identify compounds suitable for use as anti-viral agents, and the agents selected are those having the characteristics exhibited by neomycin in said method, as indicated in D3 (see page 11, line 1 to page 13, line 8). Given this clear indication, a person skilled in the art would immediately consider the use of neomycin as an anti-HCV agent, even though said indication is not quite explicit.

2. However, D3 does not state or suggest that tobramycin could be used as an anti-viral agent. The same applies to the other documents cited in the search report. It follows that claim 10 involves an inventive step (PCT Article 33(3)).

3. D1 (US-A-6001990) describes anti-sense oligo-nucleotides derived from the HCV genome and

including portions of at least 8 bases in length complementary to portions of SEQ ID NO: 3 of the present application (see sequences SEQ ID NO: 2 and 3). Sequences SEQ ID NO: 2 and 3 have been excluded from the scope of claims 11 and 12 by means of a disclaimer and thus do not affect the novelty thereof.

The same applies to D2 (US-A-6284458), which describes a sequence of 20 bases (SEQ ID NO: 33) entirely complementary to a portion of SEQ ID NO: 3 of the present application, as well as the therapeutic use thereof (see column 2, lines 20-43, column 6, lines 1-8) for treating hepatitis C. This sequence has also been excluded by means of a disclaimer.

Neither D1 nor D2 provides any indication regarding either SEQ ID NO: 3 described in the present application or a method such as the presently claimed method for identifying said sequence (see page 7, lines 8-14 of the application). Therefore, neither D1 nor D2 can be used against the inventive step of claims 11 and 12. Furthermore, considering the absence of said indications, they cannot be taken into account in assessing the inventive step of said claims.

4. Claim 1 relates to a screening method characterised in that it involves incubating subunit p116 of protein eIF3 and specific sequences of the IRES of HCV (i.e. the sequence referred to as SEQ ID NO: 2, or any sequence containing at least 10 consecutive nucleotides of said sequence) with the molecule to be tested. SEQ ID NO: 2 is derived from region II of the HCV IRES. The closest prior art is described in

D3 (WO-A-01/44266). D3 describes a method for screening molecules having anti-viral activity based on the interaction between the molecules being tested and a fragment derived from region IIIb of the HCV genome (see page 2, line 13 to page 4, line 22, page 11, lines 1-29, page 23, lines 4-29, page 28, lines 12-25, claims 18 to 21). D3 does not describe or suggest a specific role of region II of the HCV IRES in binding to protein eIF3, but does explicitly indicate that subunit p116 of protein eIF3 can be used within the framework of the invention (page 11, lines 20-24).

Therefore, the difference between the subject matter of claim 1 and the content of D3 is at least the selection of SEQ ID NO: 2 derived from region II of the HCV IRES.

No particular technical effect is associated with this feature.

The technical problem to be solved is consequently that of providing an alternative method to that of D3.

Neither D3 nor any of the other documents cited in the search report suggests a role for region II (SEQ ID NO: 2) of the HCV IRES.

It follows that the subject matter of said claim 1 appears to involve an inventive step.

5. The same applies to claims 2 to 7, which are dependent on claim 1.